



# Green Tomatoes

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# Introduction



Minji



Ashley



John



Melrose

# Motivation



# Problem Space

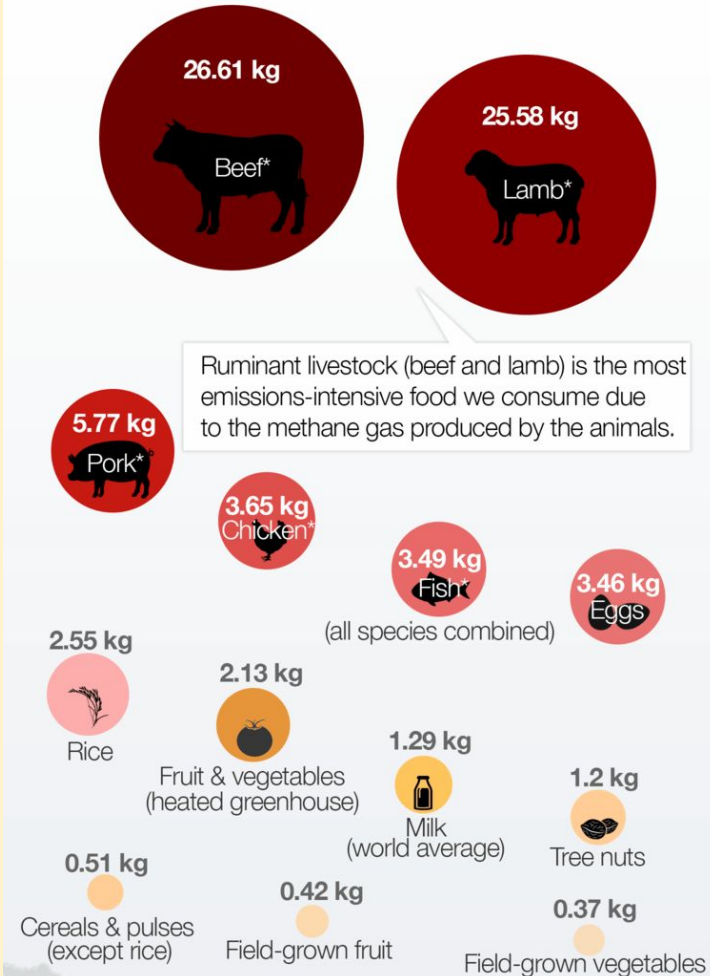
Agriculture accounts for 26% of carbon emissions

Certain food choices have disproportionately large carbon footprints

We hope to empower consumers in making more eco-conscious choices while grocery shopping

## The carbon footprint of foods

Amount of greenhouse gases in fresh foods (in kg CO<sub>2</sub>-eq/kg)



# Research Process

## 1 Desk Research

Narrowed scope to grocery shopping & identified millennials as target users

## 2 User Interviews

Explored attitudes on environmental issues & grocery shopping experiences

## 3 Concept Testing

Selected quiz & educational approaches

## 4 Cognitive Interviewing

Tested user interpretations of quiz items

## 5 Usability Testing

Tested functionality of quiz & website

# Data Process

## 1 Preliminary Research

Understood how food industry works & where we can access co2 emission data

## 2 Tapping existing databases

Contacted multiple organizations to ask for existing databases

## 3 Data mining

Gathered raw data from credible sources

## 4 Data cleaning & merging

Translated to the same weight /unit and merged to one dataset

## 5 Exploratory Data Analysis

Performed EDA to see trends and relationships in the dataset

# Storyboards

## Educating Users on the Carbon Footprint of Food

**EDUCATING PEOPLE ON ENVIRONMENTAL/HEALTH IMPACTS OF DIFFERENT FOODS**

While browsing Facebook, Katie sees an ad about Green Tomatoes.

Curious to learn more about how the foods she eats affects the environment & her health, she clicks on the ad.

It takes her to the Green Tomatoes website, which offers education of information on the sustainability and health implications of various kinds of foods, such as, produce, meat, seafood, and dairy. Looking through the website, she gains a better understanding of how the foods she usually buys affects carbon emissions & the health of herself and her family.

The next time she goes grocery shopping, she recalls what she learned from Green Tomatoes and decides to purchase poultry instead of beef to eat for dinner tonight. She feels good that she can make more sustainable buying choices when making large size purchases about the types of food she likes to eat.

What's interesting users to look through all this info? → You'd expect them to visit the site multiple times?

\* This approach doesn't really address user issues regarding cost.

## Looking up Products While Grocery Shopping

**PRODUCT LOOKUP TO GET RATINGS AND RECOMMENDED ALTERNATIVES**

At the grocery store, Katie scans the barcode of a product on her phone. She wants to more information besides what's on the label about the health/environmental implications of this item.

The Green Tomatoes app shows her information about the sustainability & health implications of the product as well as an interpretation of terms on the label such as "organic" or "natural". It also provides recommendations of alternative products with better ratings but similar price.

Katie decides to buy the alternative product recommended by the app since it's better for the environment, herself, and still within budget.

\* How likely are users to actually look up individual products one by one? Doesn't seem to address user concern of convenience.

## Personalized Assessment and Recommendations

**PERSONALIZED ASSESSMENT OF CARBON FOOTPRINT AND RECOMMENDATIONS**

While browsing Facebook, Katie sees an ad for Green Tomatoes. Curious to learn more about her environmental footprint.

It takes her to the Green Tomatoes website, where she is prompted to complete a short quiz to get a rating of the environmental health implications of her current grocery shopping habits.

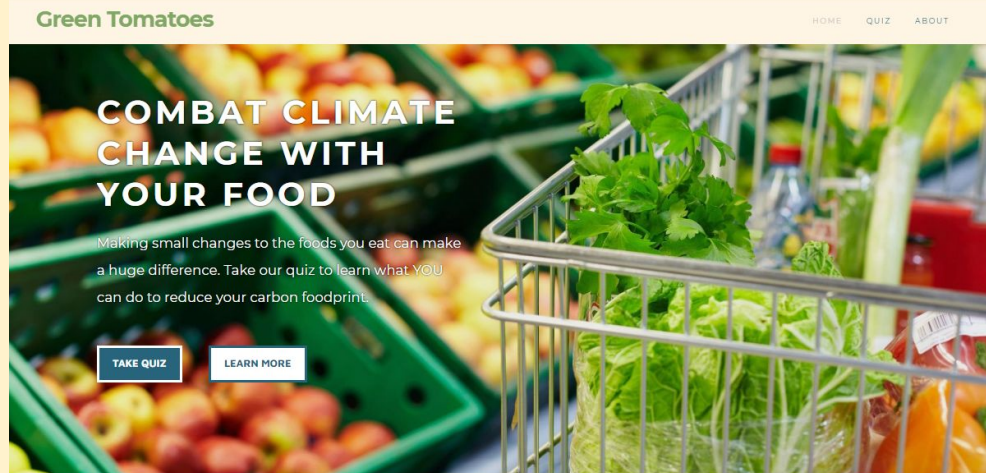
She completes the survey and gets her assessment right away. Her score is not as high as she would like, and she is surprised to learn that so many foods she often buys are so bad for both the environment and her own health. She also sees recommendations of alternative products she could buy instead that will be more sustainable but also align with her tastes & budget & values.

\* Was questioning about buying meat products they buy, budget, values etc.

Next time she goes grocery shopping, she opts for the healthier, more sustainable, but still within budget alternative recommended by Green Tomatoes. She's glad that she can make healthier, more sustainable buying choices without spending too much money or deviating too far from her personal tastes.

# Website & Data Visualizations

<https://greentomatoesproject.weebly.com/>



## WE ARE FAR FROM WHERE WE NEED TO BE TO KEEP GLOBAL WARMING AT A SUSTAINABLE LEVEL

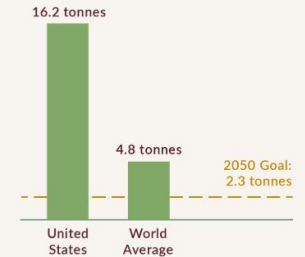


Your **carbon footprint** is the total amount of greenhouse gases emitted by your actions.

The average carbon footprint of a person in the **United States is over 3x greater than the world average.**

The global community has set a **target of limiting global warming to 2°C** above pre-industrial temperatures. To achieve that goal, the carbon footprint of everyone on Earth must **drop by a staggering 50%** by the year 2050, on average.

Carbon Footprint Per Person in 2017



# Quiz Iterations

## Mid-fi Prototype

Green Tomatoes

WHAT'S YOUR CARBON FOOTPRINT?

Budget Greenhouse Binary Restrictions Goals Location

**1. Produce**

How often do you buy produce at the grocery store?

rarely or never    2-3 times per month    once per week    2-3 times per week    4+ times per week

Which of these produce do you usually buy?

bananas	apples	oranges	spinach	strawberries
tomatoes	grapes	peaches	mushrooms	potatoes
carrots	lettuce	broccoli	bell peppers	garlic
onion	corn	cucumber	asparagus	peas

**2. Meat & Eggs**

How often do you buy meat at the grocery store?

rarely or never    2-3 times per month    once per week    2-3 times per week    4+ times per week

How often do you buy eggs?

rarely or never    2-3 times per month    once per week    2-3 times per week    4+ times per week

Lo-fi  
Prototype  
(Text only)

Usability  
Testing

Usability  
Testing

## Final Version





















Green Tomatoes

HOME MY FOOTPRINT ABOUT

00 Budget 00 Greenhouse 00 Dietary Restrictions 04 Goals

**1. Produce**

Which of these produce do you usually buy at the grocery store?






				
bananas	apples	oranges	spinach	strawberries
				
tomatoes	grapes	peaches	mushrooms	potatoes
				
carrots	lettuce	broccoli	bell peppers	garlic
				
onion	corn	cucumber	asparagus	peas

How often do you buy produce?

rarely or never    2-3 times per month    once per week    2-3 times per week    4+ times per week

**2. Meat & Eggs**

Which of these meats do you usually buy at the grocery store?

				
beef	lamb	pork	chicken	turkey

How often do you buy meat?

rarely or never    2-3 times per month    once per week    2-3 times per week    4+ times per week

How often do you buy eggs?

rarely or never    2-3 times per month    once per week    2-3 times per week    4+ times per week



# Quiz

## Green Tomatoes

[HOME](#) [MY FOODPRINT](#) [ABOUT](#)

# How big is your carbon foodprint?

Take this quiz to rate the environmental impact of your groceries and find out how you can reduce your carbon footprint from food.

START

# Quiz

## Green Tomatoes

[HOME](#)[MY FOOTPRINT](#)[ABOUT](#)[01. Budget](#)[02. Groceries](#)[03. Dietary Restrictions](#)[04. Goals](#)

### About how much do you usually spend on groceries?

Time Period

Weekly

- Less than \$50
- \$51 - 75
- \$76 - 100
- \$101 - 125
- \$126 - 150
- \$151 - 175
- \$176 - 200
- More than \$200



# Quiz

## Green Tomatoes

HOME QUIZ ABOUT

01. Budget

02. Groceries

03. Dietary Restrictions

04. Goals

### 1. Produce

Which of these produce do you usually buy at the grocery store?



bananas



apples



oranges



spinach



strawberries



# Quiz

## Green Tomatoes

[HOME](#)

[QUIZ](#)

[ABOUT](#)



carrots



lettuce



broccoli



bell peppers



garlic



onion



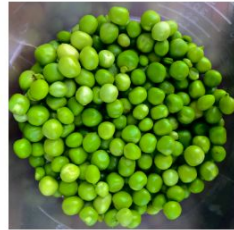
corn



cucumber



asparagus



peas

How often do you buy produce?

rarely or never



2-3 times per month



once per week



2-3 times per week



4+ times per week



# Quiz

## Green Tomatoes

HOME QUIZ ABOUT

01. Budget

02. Groceries

03. Dietary Restrictions

04. Goals

Do any of these describe you?

- pescatarian
- vegetarian
- vegan
- none

Are there any foods you are allergic/sensitive to or don't eat for personal/religious reasons?

- Yes
- No

Previous

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# Quiz

## Green Tomatoes

[HOME](#) [QUIZ](#) [ABOUT](#)

Which of the following food-related health and environmental goals are most important to you? Choose up to 3.

- Managing calorie intake
- Getting a balanced diet
- Avoiding preservatives, hormones, or pesticides (i.e. eating organic)
- Sanitary farming and food production practices
- Minimizing animal cruelty in food production
- Protecting natural habitat/wildlife
- Reducing greenhouse gas emissions from food production
- Avoiding unnecessary food waste
- Minimizing food packaging (e.g. plastic and paper) waste
- Avoiding GMOs (foods that have been genetically engineered)

Previous

Next

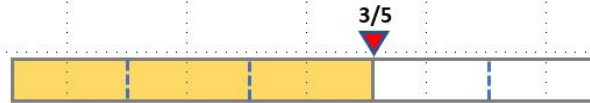
# Result

## Green Tomatoes

HOME QUIZ ABOUT



NEEDS  
IMPROVEMENT



Your GT score\* is 3 out of 5. We noticed that you purchase **Beef** and **Cheese** a lot.

- At 8kg CO2 per pound, beef is one of the most carbon-intensive food products you can buy. Consider chicken or an alternative for better results.
- Avoid large purchases of cheese if you can. It's very carbon-intensive.

\*GT Score: your relative [foodprint](#) impact based on your grocery shopping habits. Ideal case is 5 and your peer group average is 4/5.

# Challenges

- Data accessibility / availability on carbon emissions of food
- Difficult to quantify how much food people buy

# Future Directions

- Further develop quiz results & metric
- Conduct additional usability testing
- Evaluate impact / behavioral changes





Questions?

